



## **The regional reanalysis activities in UERRA to support Copernicus climate change services**

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The needs of high resolution reanalyses data with assigned quality measures are addressed by the FP7 UERRA (Uncertainties in Ensembles of Regional ReAnalyses) project. The ensemble of regional reanalyses aims to establish pre-operational climate change services for the EU Copernicus program.

UERRA is developing and running four different regional ensemble reanalysis systems, three atmospheric ones and one near surface reanalysis plus a cloud reanalysis. The SMHI and Météo-France systems will extend for 50 years (from 1961). The ensemble component of their systems is running now for a 5-year period. The full ensemble assimilation system developed at the Met Office will have more members and cover the period from 1979. The University of Bonn and DWD are developing their COSMO model based ensemble assimilation system for a period of 5 years.

UERRA will provide Data services through a common reanalysis archive at ECMWF. The combination of different models and data assimilation methods in this project, together with the individual ensembles of each production system, yields a unique potential to characterize the uncertainty of the regional reanalyses. Historical observations for climate change services, reanalyses and evaluation are added through Data Rescue and data development by URV, UEA and NMA-Romania. Their efforts build on extensive experience in the previous EURO4M project. Many more observations than committed in UERRA have been processed (5.3 million). The emphasis is on post-1961 data and on the sub-daily scale. Observations rescued in EURO4M have been provided to ECMWF for inclusion in the ODB archive.

Comparisons with observations and gridded data sets from KNMI, UEA and others will give additional measures of uncertainties. High resolution data sets from MET Norway and MeteoSwiss will address scale dependence.

The high-resolution reanalysis fields together with user oriented uncertainty information will enable potential users to maximize their benefit from using regional reanalysis products.